AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A device for detection of magnetic permeability μ or, alternatively, relative magnetic permeability μ_r or, alternatively, relative magnetic susceptibility (μ_r-1) of a sample, wherein said device contains a sample chamber and at least two coils, said two coils surrounding said sample chamber and said sample chamber having at least one opening for introduction of a sample or a sample container holding a sample, said device also provided with an electronic circuit which measures the difference in inductance between the two coils.

2. (Previously Presented) A device as claimed in claim 1, wherein each of said coils, when filled with air, has an inductance in the range of 0.01 to 100 μH.

3. (Previously Presented) A device as claimed in claim 1, wherein said sample chamber has a chamber volume in the range of 0.1 to 5000 μl.

4. (Previously Presented) A device as claimed in claim 1, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

5. (Currently Amended) A device as claimed in claim 1, wherein the material of which the sample chamber is made is a polymer, ~~such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene,~~ wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

6. (Previously Presented) A device as claimed in claim 1, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

7. (Previously Presented) A device as claimed in claim 6, wherein said electronic circuit is formed such that said coils are part of an alternating current bridge.

8. (Currently Amended) A process for interaction with magnetic markers, for detection of chemical substances with $\mu_r = 1$, ~~exemplified by proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, RNA,~~ comprising the utilization of the device of claim 1 to detect chemical substances selected from the group consisting of proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, and RNA.

9. (Previously Presented) A device as claimed in claim 2, wherein said sample chamber has a chamber volume in the range of 0.1 to 5000 µl.

10. (Previously Presented) A device as claimed in claim 2, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

11. (Previously Presented) A device as claimed in claim 3, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

12. (Previously Presented) A device as claimed in claim 9, wherein one of the coils is placed so as to be in thermal contact by being physically connected to the material which constitutes the sample chamber, but without surrounding the cavity of the sample chamber.

13. (Currently Amended) A device as claimed in claim 2, wherein the material of which the sample chamber is made is a polymer, ~~such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene,~~ wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

14. (Currently Amended) A device as claimed in claim 3, wherein the material of which the sample chamber is made is a polymer, ~~such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene,~~ wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

15. (Currently Amended) A device as claimed in claim 4, wherein the material of which the sample chamber is made is a polymer, ~~such as Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, polypropylene,~~ wood, glass, or a metal with $0.999 < \mu_r > 1.001$.

16. (Previously Presented) A device as claimed in claim 2, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

17. (Previously Presented) A device as claimed in claim 3, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of $0.0000001 < \mu_r < 10$.

18. (Previously Presented) A device as claimed in claim 4, wherein it is provided with an electronic circuit whose output signal is proportional to the

difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of 0.0000001 $< \mu_r <$ 10.

19. (Previously Presented) A device as claimed in claim 5, wherein it is provided with an electronic circuit whose output signal is proportional to the difference in inductance between said coils and to the relative magnetic permeability of the sample material placed in one of the coils, which is in the range of 0.0000001 $< \mu_r <$ 10.

20. (Currently Amended) A process for interaction with magnetic markers, for detection of chemical substances with $\mu_r = 1$, ~~exemplified by proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, RNA,~~ comprising the utilization of the device of claim 2 to detect chemical substances selected from the group consisting of proteins, hormones, complement factors, bacteria, cells, viruses, fungi, yeast, spores, phages, cells, cell organelles, DNA, and RNA.

21. (New) A device as claimed in claim 5, wherein the polymer material of which the sample chamber is made is selected from the group consisting of Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.

22. (New) A device as claimed in claim 13, wherein the polymer material of which the sample chamber is made is selected from the group consisting of Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.

23. (New) A device as claimed in claim 14, wherein the polymer material of which the sample chamber is made is selected from the group consisting of Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.

24. (New) A device as claimed in claim 15, wherein the polymer material of which the sample chamber is made is selected from the group consisting of Delrin, POM, polyvinyl chloride, Teflon, polyamide, polyacetal, polyethylene, polycarbonate, polystyrene, and polypropylene.